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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

2247-114

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Application Number

10/716,437

Filed

November 20, 2003

First Named Inventor

Vercelotti et al.

Art Unit

3743

Examiner

Patel, Nihir

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record. 48,000
Registration number _____

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____

Signature

Adam M. Treiber

Typed or printed name

(202) 783-6040

Telephone number

6/29/2006

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Pre-Appeal Brief Request for Review
Reasons

The present invention is directed to a surgical device and method for bone surgery. The surgical device or handpiece 1 includes a body 2 that is easily gripped by a surgeon and a tip 3, mounted on one end of the body 2, that has a shape suitable for certain types of bone surgery operations, such as implantations on an edentulous ridge, extractions of impacted third molars in the vicinity of dental alveolus, vertebral laminectomy treatments, hand and foot surgery, etc. The body 2 also includes an external connector 4, mounted on the other end, that carries two electrical supply cables 5 and 6 and two hydraulic supply lines 7 and 9. The console 10 includes a power stage 23 that generates alternating current and voltage to drive transducer 47 of handpiece 1. *See, e.g.,* Specification at Pages 4–6, FIGS. 1, 3.

The transducer 47 acts as a sound wave concentrator and sets a tang 48 in motion at an ultrasonic frequency, such as, for example, 24 to 30 kHz. The tang 48 has a threaded attachment 49 that engages a threaded seat 50, of the tip 3, to transfer the ultrasonic vibrations to the tip 3. The microprocessor unit 20 of the console 10 controls the vibration of the tip 3 according to one of several operating modes, including vibrating the tip 3 using ultrasonic frequencies alone, vibrating the tip 3 using ultrasonic frequencies that are modulated at low frequency (e.g., 6 to 40 Hz), and vibrating the tip 3 using ultrasonic frequencies that are modulated in low frequency bursts. *See, e.g.,* Specification at Pages 6–7; FIG. 3. Advantageously, the “modulation of the vibration of the tip 3 allows the heat that develops on the soft tissue to be minimized because of the dissipation of energy due to the vibration of the tip.” Specification Page 6 (Paragraph 0050).

Claims 9, 12, 15 and 16 were finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Mehta (US 5,843,109). *See*, final Office Action mailed April 4, 2006, at Pages 2–3. Claim 9 is directed to a surgical method of bone surgery and recites, *inter alia*, a tip set in vibration at a frequency in the ultrasound range, wherein the vibration of the tip is modulated with low frequency pulses. Claims 12, 15 and 16 are directed to surgical methods of bone surgery and recite, *inter alia*, a tip set in vibration at a frequency in the ultrasound range, wherein the vibration of the tip is modulated with low frequency pulses. Applicants submit that Mehta fails to teach or suggest these features.

Mehta discloses a handpiece apparatus for the disruption (i.e., fragmentation, eroding, sloughing off and emulsification) and removal of unwanted material from a body that includes a needle for radiating ultrasonic energy into the body, and a lumen, provided through the needle, for passing aspiration fluid into, and fragmented material out of, the body. See, Col. 1:59 to Col. 2:4. While Mehta does not disclose the frequency, or frequency range, at which his needle 20 radiates ultrasonic energy, "ultrasonic" frequencies are known to be above the audible range of human hearing, i.e., above 20 kHz. That being said, Mehta simply fails to disclose modulating an ultrasonic vibrating tip with low frequency pulses, as recited by Claims 9, 12, 15 and 16. Contrary to the assertion by the final Office Action, this feature is not an inherent characteristic of Mehta's tip.¹ Instead, Mehta merely discloses that his needle 20 radiates ultrasonic energy and fails to teach or suggest that this ultrasonic energy may be modulated in any way, including through the use of low frequency pulses.

Consequently, Mehta fails to teach or suggest all of the features recited by Claims 9, 12, 15 and 16. Accordingly, these claims are allowable over Mehta.

Moreover, none of the references of record, taken either singly or in combination, teaches or suggests these features.

¹ "Inherently the tip of Mehta when modulated with low frequency pulses it will produce an extremely fine and precise bone cut in the bone tissue." Final Office Action at Page 2.